

# Vaccine passports and health disparities: a perilous journey

Nancy S Jecker  <sup>1,2</sup>

<sup>1</sup>Department of Bioethics & Humanities, University of Washington School of Medicine, Seattle, Washington, USA

<sup>2</sup>Department of Philosophy, University of Johannesburg, Auckland Park, Gauteng, South Africa

## Correspondence to

Dr Nancy S Jecker, Department of Bioethics & Humanities, University of Washington School of Medicine, Seattle, WA 98195, USA; nsjecker@uw.edu

Received 10 April 2021

Accepted 22 June 2021

Published Online First

9 July 2021

## ABSTRACT

This paper raises health equity concerns about the use of passports for domestic and international travel to certify COVID-19 vaccination. Part I argues that for international travel, health equity objections undercut arguments defending vaccine passports, which are based on tholding people responsible, protecting global health, safeguarding individual liberty and continuing current practice. Part II entertains a proposal for a scaled down vaccine passport for domestic use in countries where vaccines are widely and equitably available. It raises health equity concerns related to racial profiling and fairness to people who are vaccine cautious. Part III sets forth a proposal for a flexible pass that certifies people who have been vaccinated, tested, previously infected or granted a conscientious objection. It sets ethical guidelines for the timing and use of flexible passes that promote equity, public health education, antidiscrimination, privacy and flexibility.

Vaccine passports are certifications of vaccination used to promote public health by requiring proof of vaccination as a condition for engaging in activities such as international and domestic travel; going to restaurants, bars and gyms; and attending entertainment events. During the COVID-19 pandemic, vaccine passports are being implemented and discussed in many parts of the world. Israel was the first to debut a ‘green pass,’<sup>1</sup> and the European Union is considering establishing a ‘Digital Green Certificate’ to enable free travel within its bloc. Australia has implemented a vaccine passport and Britain’s ‘NHS app’ is being used to certify vaccination.<sup>2</sup> The USA has decided against issuing vaccine passports at the federal level but has left states free to impose them; two states (New York and Hawaii) have done so, while the remaining states have either banned or not required them.<sup>3</sup>

Are vaccine passports a useful public health tool or a wrongful invasion of individual liberty? Will they bring people back together or further divide them? Public opinion polls show the public disagrees.<sup>4–6</sup> Bioethicists cannot seem to agree either. Kofler and Baylis flat out oppose vaccine passports, arguing that any documentation that limits individual freedoms on the basis of biology risks becoming a platform for restricting human rights, increasing discrimination and threatening—rather than protecting—public health.<sup>7</sup> Brown *et al* give them qualified endorsement, citing a strong presumption in favour of doing what it takes to protect people’s freedom of movement.<sup>8</sup>

Amidst the controversy, an article in the *New England Journal of Medicine* claimed to strike a middle ground: use vaccine passports but restrict

their application to ‘non-essential’ settings, like restaurants, bars, entertainment and travel, rather than ‘essential’ settings, like work and school.<sup>9</sup> The authors, Hall and Studdert, billed this as a compromise, and dubbed the alternative of banning passports, ‘a policy extreme.’ Yet, as the paper will show, requiring vaccine passports for international travel, included in the authors’ proposal, is a ‘compromise’ only if those doing the bargaining are high-income countries (HICs). In domestic settings, their use is not a fair compromise unless vaccines are widely available to all segments of society and certain ethical requirements are met.

This paper seeks a truer compromise that is fairer to all who would be subject to constraints. Part I argues that for international travel, health equity objections undercut arguments for vaccine passports. Part II entertains a proposal for a scaled down vaccine passport for domestic use in countries where vaccines are widely and equitably available. It raises health equity concerns related to profiling and enforcement and fairness to vaccine cautious people. Part III advances a proposal for a flexible pass that certifies people who have been vaccinated, tested, previously infected or granted a conscientious objection. It sets ethical guidelines for domestic uses of flexible passes.

## VACCINE PASSPORTS FOR INTERNATIONAL TRAVEL

Even before vaccines were available, governments were exploring so-called ‘immunity passports’ to certify individuals who were previously infected and had developed antibodies to the SARS-CoV-2 virus.<sup>10</sup> The World Health Organization (WHO) cautioned against the idea, because their accuracy could not be guaranteed.<sup>11</sup> The Nuffield Council on Bioethics also expressed caution, taking the position that ‘there is too much scientific uncertainty and there are too many unresolved ethical concerns to support the use of immunity passports.’<sup>12</sup> Now that vaccines are available in many parts of the world, the conversation has shifted to vaccine passports to keep the public safe. While the WHO has opposed them for international travel, citing equity and science concerns,<sup>13</sup> most discussions have ignored the wide gap in vaccine access that exists between low-income and middle-income countries (LMICs) versus HICs. As of June 2021, 85% of shots that have gone into arms worldwide have been administered in high and upper-middle income countries, and only 0.3% in low-income countries.<sup>14</sup> Drawing on this observation, section I argues that health equity considerations are a decisive ethical reason to hold off on vaccine passports for international



© Author(s) (or their employer(s)) 2022. No commercial re-use. See rights and permissions. Published by BMJ.

**To cite:** Jecker NS. *J Med Ethics* 2022;**48**:957–960.

travel for now. Health equity concerns undercut arguments given in defence of vaccine passport that appeal to holding people responsible, protecting global public health, safeguarding individual liberty and continuing current practice.

### Holding people responsible

Defenders of vaccine passports for international travel argue that it is 'only fair' to require people to 'bear a consequence for their refusal' to vaccinate.<sup>9</sup> Yet, globally, not everyone gets to choose. As noted already, 85% of vaccines have been administered to people in HICs or upper-middle-income countries. As of June 2021, the cumulative number of doses administered per 100 people ranged from over 100 in Israel and the UK, to 3 or fewer in South Africa and Guatemala.<sup>15</sup> It is unfair to ask people without access to vaccines to bear the consequences of a 'choice' they never made. Nkengasong, the head of the Africa Centers for Disease Control and Prevention, described passports as 'inappropriate' under current conditions, where LMICs lag so far behind HICs in equitable access to vaccine; in a press conference, he put the point this way, 'any imposition of a vaccination passport will create huge inequities and will further exacerbate them.'<sup>16</sup>

### Protecting global health

A second defence of vaccine passports appeals to the fact that although they impose a requirement for vaccination and certification, they are ethically justified to protect health and save lives. Passports incentivise vaccinations by giving advantages to people who get vaccinated, and for this reason, may help end the pandemic sooner. However, the reason the world is unsafe is not that people in LMICs refuse to vaccinate; it is that they do not have access to vaccines. Allocating more of the world's vaccines to LMICs in Latin America and Asia would protect global health far more than closing down travel for people living in poorer places. Ultimately, it will keep vaccinated people safer too, reducing the odds that new mutations of the virus will emerge that prove impervious to protections afforded by vaccines and prior infection.

Still, a defender of vaccine passports might argue that the world has stepped up already and given vaccines to poorer nations. In June 2021, leaders of the group of 7 pledged 1 billion doses of COVID-19 vaccines to LMICs through COVAX, the international partnership that aims to accelerate development of COVID-19 vaccines and distribute them equitably.<sup>17</sup> Why not continue such efforts and, in tandem, implement vaccine passports for international travel? In reply, at the current rate, there will not be enough vaccines to cover the world's population until 2023 or 2024.<sup>18</sup> If, during the intervening years, wealthy nations form their own exclusive travel club, shunning people from poorer nations, what message does that send? How could it not leave a lasting mark on international relations for years to come?

### Safeguarding individual liberties

Brown *et al* mount a defence of vaccine passports that appeals to 'a strong presumption...in favour of preserving people's free movement if at all feasible;' they go on to argue that passports protect this by allowing vaccinated people to come freely together and travel where they like.<sup>8</sup> In reply, it is helpful to ask, who is freer with vaccine passports and who is not? Vaccine passports for international travel would ban many COVID-negative people in LMICs from flying because they do not have access to vaccines. By contrast, the current approach to international travel, which typically requires a negative COVID-19 test, is far

less restrictive, because testing is much more widely available than vaccines are.

Yet a proponent of passports might object that people living in LMICs don't travel much anyway, precisely because of their low incomes. In reply, this objection is self-defeating. If people in low-income nations don't travel much anyway, why do we need vaccine passports to prevent them from travelling?

A proponent of vaccine passports could argue that vaccine passports encourage people in wealthier countries to travel to LMICs as tourists, which is a boon to these economies. Yet, in reply, travel can also spread disease to unprotected regions. While there is encouraging preliminary data about transmissibility of the SARS-CoV-2 virus with two mRNA vaccines (Pfizer and Moderna),<sup>19</sup> uncertainty remains about the ability of these and other vaccines to prevent transmission, and transmissibility may vary depending on the virus strains circulating in a particular region.

Finally, an endorser of vaccine passports might say that there is no 'right to travel,' so even if vaccine passports restrict the movement of many people in LMICs, they do not violate their rights. However, in response, many hold that moving freely from place to place is a basic liberty and overriding it demands a special justification. Gostin and Chertoff argue that liberty deprivations, including travel restrictions, must be justified on the basis of sound science and careful balancing of public health and individuals' liberty interests.<sup>20</sup> They argue that public health restrictions should be the least restrictive means to achieve a public health goal. In the case of vaccine passports, less restrictive means than vaccine passports are available to keeping the public safe (discussed in section III).

### Continuing current practice

Osama *et al* endorse vaccine passports on the ground that the world is already using them, so it only makes sense to apply them to COVID-19 vaccines.<sup>21</sup> Citing the example of yellow fever, they note that the WHO endorses certificates confirming vaccination against yellow fever for entry into certain regions where it is endemic.

However, vaccine requirements for yellow fever are nothing like proposals being floated for COVID-19. With COVID-19, we have witnessed a rapid, mass roll-out of a variety of vaccines with a range of efficacies and no agreed on standards for scientific authorisation, monitoring and documentation. By contrast, the yellow fever vaccination is a single shot, using a WHO preapproved vaccine, administered in regulated centres with defined conditions for vaccine administration and documentation.<sup>22</sup> In contrast to the SARS-CoV-2 virus, which is rapidly replicating and mutating with different strains circulating in different regions, yellow fever virus exhibits slower evolutionary dynamics and is limited to regions of Africa and Latin America where the infected *Aedes* or *Haemagogus* species mosquitoes are found. To be consistent, we would need to apply the same standard to COVID-19 certification that we apply to yellow fever certification; this entails not requiring certification of COVID-19 vaccination until we can do so using WHO-approved vaccines administered in regulated centres with defined conditions and documentation.

With COVID-19 vaccines, there remains significant uncertainty about the duration of protection and the possibility of transmission after vaccination (which is preliminarily established for some vaccines but not others). In light of this, passports could backfire, posing a threat to public health.

In sum, the arguments presented in this section point to grossly unequal access to COVID-19 vaccines across the globe as a strong ethical reason to hold off on using them.

## VACCINE PASSPORTS FOR DOMESTIC SETTINGS

If vaccine passports for international travel are not ethically defensible, should we ban them outright? It would be hasty to conclude this without considering a scaled down version of the proposal. A modified proposal might use vaccine passports within countries where effective and scientifically vetted vaccines are widely available and equitably distributed. In these settings, they could be used for domestic travel as well as access to non-essential settings, such as indoor dining, bars, gyms and entertainment, and essential settings, such as schools and workplaces. In support of a scaled down approach, proponents tend to emphasise protecting public health and preventing free riding.

### Protecting public health

A strong argument for domestic vaccine passports is that they help people get their lives back on track and socialise safely with others, reducing social isolation and loneliness associated with lockdowns and sheltering in place. Reducing social isolation in turn, protects public health, because social isolation is a major social determinant of health. Social isolation predicts all-cause mortality at levels that match well-documented clinical risk factors, such as smoking, while eclipsing others, such as obesity.<sup>23</sup> Vaccine passports seem like a smart and effective tool to prevent these untoward effects.

Yet, an important question is who would vaccine passports help and who would they hinder? To answer this, consider who has the greatest access to vaccines and who has the least. Socially marginalised groups, such as people who are poor, racial and ethnic minority, or displaced, tend to have less access than the general population. Vaccine passports would worsen health disparities if they excluded these groups from many areas of social life, increasing their social isolation.

Even in wealthier nations like the USA, where vaccines are in principle available to every adult, access is not equal; during the first 4.5 months of the US vaccination programme, high social vulnerability counties had lower COVID-19 vaccination coverage than did low social vulnerability counties.<sup>24</sup> Part of the problem is that people in high social vulnerability counties have a harder time getting to large vaccination sites because they cannot afford time off work, transportation or lack internet access to obtain an online appointment.

Vaccine caution is a further reason for lower vaccination rates among socially disadvantaged groups. In the USA and other countries, cycles of unequal access to care and disproportionate exposure to health risks have eroded trust in medicine and science among racial and ethnic minority groups, which, in turn, feeds vaccine reluctance.<sup>25</sup> For example, more than 90 days into the US vaccination roll-out, an Associated Press - NORC (Nonpartisan and Objective Research Organization at the University of Chicago) poll reported that Black Americans remained among the groups most likely to report reluctance to get vaccinated.<sup>26</sup>

An additional concern is whether enforcing vaccine passports would lead to racial profiling.<sup>7</sup> The worry is that the credentials of certain demographic groups would be more often questioned and the message conveyed would be that they are not welcomed. Even the perception that this is happening could be divisive, leading to accusations and anger that fuel division.

In response to the above arguments, it could be objected that unless we implement vaccine passports to entice customers back to restaurants, shops and businesses, the economy will falter, which threatens public health too. In reply, there are other ways to open economies. Masking and physical distancing are fairer than vaccine passports as are methods of certification that are flexible (discussed in section III).

### Preventing free riding

Another argument supporting vaccine passports holds that those who refuse vaccines are free riders. They get something for nothing, benefitting from population-level protection without contributing to it by getting vaccinated. It might be thought that vaccine passports prevent free riders from enjoying something for nothing.

In reply, this argument glosses over the diverse reasons that lead people to refuse COVID-19 vaccines, boiling everything down to free riding. Undoubtedly, some vaccine refusers do free ride. Many others refuse vaccines for practical reasons: they cannot take unpaid time off work, do not have affordable childcare or have a hard time getting to vaccination sites. Undocumented migrant workers may fear being deported if they go to a vaccination site where people in uniform ask them for identification. Others distrust the rapid roll out and emergency authorisation of vaccines, worry that scientists are beholden to politicians and regard for-profit companies as having a conflict of interest. They take a 'wait-and-see' approach and plan to get their shots eventually. False information fuels other people's vaccine refusal, fed by rumours and conspiracy theories on unregulated e-commerce and social media sites.

Some oppose vaccines on the basis of deeply held religious principles. The fact that Johnson & Johnson used abortion-derived fetal cell lines to develop, test and produce their COVID-19 vaccine has met with resistance by some Catholic leaders, despite the fact that the Vatican has said, 'it is 'morally acceptable' to take vaccines that used fetal cell lines in their research and production process.'<sup>27</sup>

Others refuse vaccines based on a principle that places priority on individual welfare over benefits to the population.<sup>28</sup> Public health discourse may encourage such a mindset when it uses the language of choice, empowerment, personal responsibility and participation that emphasises individual rights over duties to others.

Yet, proponents of vaccine passports might argue that conscientious objectors can be accommodated through conscientious objector exceptions. However, the downside of this strategy is that historically, people have looked askance at conscientious objectors, labelling them 'bad citizens' and accusing them of free riding.<sup>29</sup> With new virus variants circulating that may diminish efficacy for some vaccines, the bar for population-level protection may rise, exerting more intense pressure on vaccine refusers to get vaccinated.

### A PERILOUS JOURNEY

When we think about the ethics of vaccine passports, the very first question we need to ask is, do we have fair equitable access to vaccines? If we don't, passports will only entrench inequities. Globally, LMICs fall far behind HICs, and people living in these regions have the most to lose if vaccine passports are implemented for international travel. Rather than requiring vaccination, requiring testing is fairer, because tests are more readily available around the world. So are masks. Both internationally and domestically, we need to worry about how enforcement will be done and the very real possibility that policing would result in profiling certain groups. All things considered, our best bet is holding off on vaccine passports for international travel until there is more universal access to vaccines. Meanwhile, we should double our efforts to vaccinate people in LMICs.

At the domestic level, countries that have not yet ensured their residents widespread equitable access to vaccination should hold off on vaccine passports too. Once countries achieve this, a

scaled down vaccine passport for domestic settings within countries becomes more ethically defensible. Yet even then, concerns remain about enforcement and the exclusion of conscientious objectors from important areas of social life.

We are left with imperfect solutions applied to an imperfect world. Yet some tools are ethically better than others, because they better uphold the values we aspire to, such as health equity and equal respect for persons. Rather than implementing a vaccine passport, a fairer tool would be a flexible pass: a method to certify not just vaccination, but testing or prior infection, while making exceptions for conscientious objectors.

Any flexible pass implemented in a domestic setting must meet ethical standards prior to implementation, including (1) achieving widespread equitable access to vaccination; (2) educating people through public health campaigns that address vaccine benefits and safety; (3) addressing racial and other forms of profiling by antidiscrimination policies; (4) protecting privacy by methods such as offering passes that are not exclusively digital, are decentralised and open source, and do not allow tracking people<sup>30</sup> and (5) putting in place methods for monitoring safety and changing passes in response to new scientific information or ethical concerns that arise postimplementation.

In conclusion, vaccine passports for international and domestic travel may seem initially enticing—fulfilling a yearning to travel only in ‘friendly’ skies. Yet, in reality, they make the skies unwelcoming for many people. Flexible passes, rather than vaccine passports, are the most ethically defensible way to keep people safe. While not a silver bullet, done right, flexible passes can guide us on the perilous journey to a safer world.

**Acknowledgements** A version of this paper will be presented at the 2022 American Philosophical Association, Eastern Division Meeting, Montreal, Canada.

**Contributors** NSJ is the sole contributing author to this manuscript.

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None declared.

**Patient consent for publication** Not required.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data availability statement** There are no data in this work.

#### ORCID iD

Nancy S Jecker <http://orcid.org/0000-0002-5642-748X>

#### REFERENCES

- Sommer AK. Some foreigners in Israel are finally able to obtain COVID vaccine pass. *Haaretz News*, 2021. Available: <https://www.haaretz.com/israel-news/premium-some-foreigners-in-israel-are-finally-able-to-obtain-covid-19-green-passport-1.9683026> [Accessed 5 Apr 2021].
- BBC New Reporter. What is a COVID-19 Passport and what are the plans for the NHS APP. BBC news 19 May, 2021. Available: <https://www.bbc.com/news/explainers-55718553>
- Davis E. *These states have banned vaccine Passports. U.S. news and world report 01 June, 2021.*
- Euronews. Euronews exclusive POLL: many Europeans support vaccine passports but are divided over travelling. EuroNews 11 March 2021, 2021. Available: <https://www.hospitalitynet.org/news/4103402.html> [Accessed 14 Jun 2021].
- KANTAR. Majority of Britons support vaccine passports for travel. 25 February, 2021. Available: <https://www.kantar.com/inspiration/society/majority-of-britons-support-vaccine-passports-for-travel> [Accessed 14 Jun 2021].
- Brenan M. US Support for Vaccination Proof Varies by Activities. *Gallup*, 2021. Available: <https://news.gallup.com/poll/349580/support-vaccination-proof-varies-activity.aspx> [Accessed 07 May 2021].
- Kofler N, Baylis F. Ten reasons why immunity passports are a bad idea. *Nature* 2020;581(7809):379–81.
- Brown RCH, Kelly D, Wilkinson D, et al. The scientific and ethical feasibility of immunity passports. *Lancet Infect Dis* 2021;21(3):e58–63.
- Hall MA, Studdert DM. ‘Vaccine Passport’ Certification — Policy and Ethical Considerations. *N Engl J Med Overseas Ed* 2021.
- Phelan AL. COVID-19 immunity passports and vaccination certificates: scientific equitable, and legal challenges. *Lancet* 2021;395:1597–8.
- WHO. Immunity Passports’ in the context of COVID-19, 2020. Available: <https://www.who.int/news-room/commentaries/detail/immunity-passports-in-the-context-of-covid-19> [Accessed 14 Jun 2021].
- Nuffield Council on Bioethics. Rapid Policy Briefing: COVID-19 Antibody Testing and ‘Immunity Certification’, 2020. Available: <https://www.nuffieldbioethics.org/publications/covid-19-antibody-testing-and-immunity-certification> [Accessed 14 Jun 2021].
- WHO. Interim position paper: considerations regarding proof of COVID-19 vaccination for international travelers, 2021. Available: <https://www.who.int/news-room/articles-detail/interim-position-paper-considerations-regarding-proof-of-covid-19-vaccination-for-international-travellers> [Accessed 14 Jun 2021].
- Holder J. Tracking coronavirus vaccinations around the world. *New York Times*, 2021. Available: <https://www.nytimes.com/interactive/2021/world/covid-vaccinations-tracker.html> [Accessed 23 Jun 2021].
- Our World in Data. COVID-19 vaccine doses administered per 100 people, 2021. Available: <https://ourworldindata.org/grapher/covid-vaccination-doses-per-capita> [Accessed 12 Jun 2021].
- Nkengasong J. Quoted in Muhumuza RS, Africa CDC Says Vaccine Passports ‘Inappropriate’ for Now. *AP News*, 07 April, 2021. Available: <https://apnews.com/article/travel-immunizations-coronavirus-pandemic-africa-uganda-d32295c797db1fbb7031b9bafa77755b> [Accessed 14 Jun 2021].
- Leaders of the G7 Nations Will Offer Plans to Bring the Pandemic to an End. *New York Times* 11 June.
- Taylor A, Hodges EU, Chigbu J. Duke University Launch and Scale Speedometer: issue brief: deciphering the manufacturing landscape for COVID-19 vaccines, at 2, 2021. Available: <https://launchandscalefaster.org/sites/default/files/documents/Speedometer%20Issue%20Brief-COVID%20Manufacturing%20Landscape%2019%20March%2021.pdf> [Accessed 21 May 2021].
- Thompson MG, Burgess JL, Naleway AL, et al. Interim Estimates of Vaccine Effectiveness of BNT162b2 and mRNA-1273 COVID-19 Vaccines in Preventing SARS-CoV-2 Infection Among Health Care Personnel, First Responders, and Other Essential and Frontline Workers - Eight U.S. Locations, December 2020-March 2021. *MMWR Morb Mortal Wkly Rep* 2021;70(13):495–500.
- Gostin LO, Chertoff MJ. Lockdowns, Quarantines, and travel restrictions, during COVID and beyond. *Health Affairs Blog* 2021.
- Osama T, Razai MS, Majeed A. Covid-19 vaccine passports: access, equity, and ethics. *BMJ* 2021;373(861):1–2.
- Schlagenhauf P, Patel D, Rodriguez-Morales AJ, et al. Variants, vaccines and vaccination passports: challenges and chances for travel medicine in 2021. *Travel Med Infect Dis* 2021;40:101996–3.
- National Academies of Sciences, Engineering, and Medicine. *Social isolation and loneliness in older adults*. National Academies Press, 2020.
- Barry V, Dasgupta S, Weller DL, et al. Patterns in COVID-19 Vaccination Coverage, by Social Vulnerability and Urbanicity - United States, December 14, 2020-May 1, 2021. *MMWR Morb Mortal Wkly Rep* 2021;70(22):818–24.
- Corbie-Smith G. Vaccine Hesitancy is a scapegoat for structural racism. *JAMA Health Forum*.
- Stobbe M, Fingerhut H. AP-NORC POLL, 2021. Available: <https://apnews.com/article/ap-norc-poll-3rd-adult-skeptical-vaccine-3779574a6d45d38cfc1d8615eb176b2d> [Accessed 14 Jun 2021].
- Congregation for the Doctrine of the Faith. Note on the morality of using some Anti-Covid-19 vaccines, 21 December, 2020. Available: [https://www.vatican.va/roman\\_curia/congregations/cfaith/documents/rc\\_con\\_cfaith\\_doc\\_20201221\\_nota-vaccini-anticovid\\_en.html](https://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_con_cfaith_doc_20201221_nota-vaccini-anticovid_en.html) [Accessed 14 Jun 2021].
- Goldenberg MJ. *Vaccine Hesitancy*. University of Pittsburgh Press, 2021.
- Durbach N. Class, gender, and the conscientious Objector to vaccination, 1898–1907. *J Br Stud* 2002;41(1):58–83.
- American Civil Liberties Union (ACLU). There’s a lot that Can Go Wrong with ‘Vaccine Passports.’, 2021. Available: <https://www.aclu.org/news/privacy-technology/theres-a-lot-that-can-go-wrong-with-vaccine-passports/> [Accessed 14 Jun 2021].